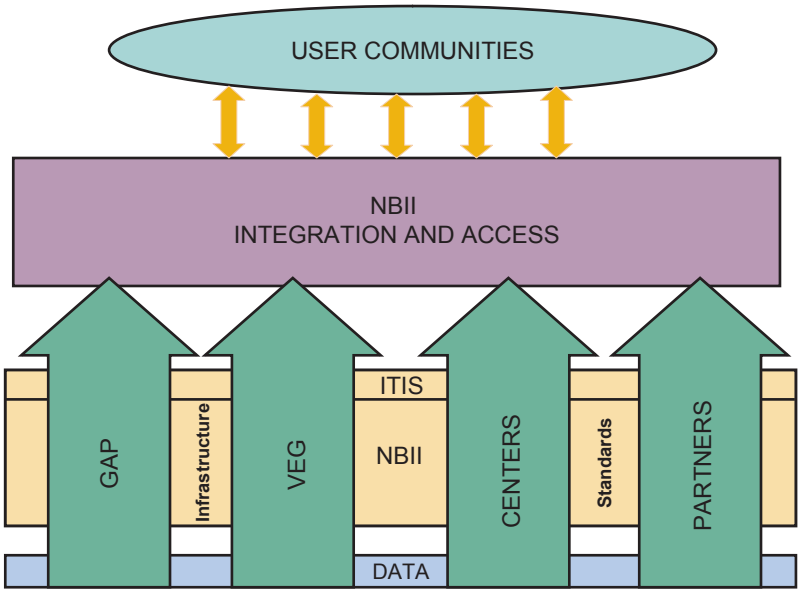
Biological Informatics Program

Biological resources – from the genetic information within organisms to the life-sustaining services provided by ecosystems – are vital to human well-being. For researchers, resource managers, decision-makers, and interested citizens to understand these resources and assure their maintenance, it is important that the capacity exists for accessing, sharing, and utilizing pertinent data and information.

The U.S. Geological Survey (USGS) Biological Informatics Program is building this capacity in support of the Serving Communities mission area of the U.S. Department of the Interior Strategic Plan. The USGS Biological Informatics Office (BIO) of the bureau's Biological Resources Discipline administers the Biological Informatics Program.



Data and information are served to customers through a careful integration of BIO's components. Data are generated through major programs such as GAP, VEG, Science Centers, and Partner initiatives. These data are passed through standards and protocols like ITIS and Federal Geographic Data Committee (FGDC) profiles to assure interoperability and quality. The NBII infrastructure provides the computing system foundation upon which these processes operate. Additional NBII functionalities serve the needs of the user community through data and information integration and dissemination.

Mission and Goals

The mission of the Biological Informatics Program is to create the informatics framework, provide the scientific content, and develop the public and private partnerships needed for the understanding and stewardship of our nation's biological resources.

This mission is achieved through the following goals:

- Increase the availability and usefulness of biological resources data and information (Content),
- Implement technologies and tools to integrate, analyze, visualize, and apply biological information to natural resource issues (Tools),
- Develop, apply, and promote the adoption of standard practices, protocols, and techniques to enhance knowledge discovery and retrieval from various resources (Infrastructure),
- Facilitate information science and technology research that supports the advancement of biological informatics capabilities (Research), and
- Apply innovative technologies and best practices to improve the development, description, and dissemination of biological information to customers (User Services).

Program Components

Governments and institutions are calling for the collection of and access to a wide variety of critical information about our biological resources. This spans information on species, habitats, and ecosystems, and also includes impacts of human activities, best practices for management, and more. The following core integrated components of the Biological Informatics Program have been created to design, develop, implement, and update the capabilities needed to accommodate its mission:

- **Gap Analysis Program (GAP)** <gapanalysis.nbii.gov>: provides state, regional, and national conservation assessments of native vertebrate species and natural land cover types.
- **Vegetation Characterization Program (VEG)** <biology.usgs.gov/npsveg/>: characterizes vegetation primarily on National Park Service lands using a consistent methodology supported by national standards.

- **National Biological Information Infrastructure (NBII)** <www.nbii.gov>: implements a fully digital, interactive, distributed system that provides access to scientifically reliable natural science data and information.
- **Integrated Taxonomic Information System (ITIS)** <www.itis.gov/>: provides an authoritative source of species names and their hierarchical classification.
- **USGS Science Center-Based Informatics Projects** <biology.usgs.gov/pub_aff/centers.html>: supports USGS Science Center-based knowledge-sharing projects, planned for and executed at the Center level, that address Center priorities.

Strategic Direction

Strategic direction is set through consultation with Program stakeholders, partners, and customers throughout federal, state, and local governments; non-governmental organizations; academic institutions; the private sector; and the global community. Progress toward these goals will be measured by means of a set of indicators that express the extent of the biological resources knowledge base made accessible through Program activities.

For a more detailed description of the Biological Informatics Program and its strategic direction, see <biology.usgs.gov/bio/BIO5yrPlan2005-2009.pdf>.

For More Information

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Find us on the Web at <biology.usgs.gov/bio/>.

Photo credit: Elizabeth Sellers/NBII

*Data and information about invasive species, such as multiflora rose (*Rosa multiflora*), are available through a variety of Biological Informatics Program components.*